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an understanding of the simpler member from which it is derived. A knowledge of the present conception of the structure of benzene is certainly necessary in order to understand the isomeric compounds and the formation and reactions of the complex derivatives. The subjects are quite fully developed, with charts to illustrate the relationship of substances to one another, and methods of preparation, for use in a laboratory, are given in an appendix, as is also a short review of the general method of testing for the commoner organic substances. The book is intended evidently for men preparing for Board examinations.

J. E. G.

SCIENTIFIC JOURNALS.

The Journal of Physical Chemistry, June: Molecular Weights of Liquids, two papers by Clarence L. Speyers. Benzilorthocarboxylic Acid, by C. A. Soch; a study of the two modifications. Analysis of Aqueous Alcohol, by Chester B. Curtis; the method proposed is titration with toluene until milky turbidity appears. The results are as accurate as the pycnometer tests, are simple and rapid. The delicacy of the test increases rapidly with the strength of the alcohol. The Benzoyl Ester of Acethydroxamic Acid, by Frank K. Cameron; a study of the two modifications. Boiling-point Curve for Benzene and Alcohol, by E. F. Thayer. October: Benzaldoxime, by Frank K. Cameron. The Isothermal Pressure-surface in the Case of Two Single Salts and one Double Salt, by F. G. Donnan. The Molecular Weight of Orthorhombic, Monoclinic and Plastic Sulphur in Naphthalene and Phosphorus by the Freezing-point Method, by Samuel D. Gloss; from the boiling-point method in carbon disulfid and in benzene, Orndorff and Terasse conclude that orthorhombic and monoclinic sulfur have the same molecular weight; Blitz by the vapor-density method reaches the same result for orthorhombic and plastic sulfur; the author also concludes from a series of determinations by the freezing-point method, using naphthalene and phosphorus as solvents, that the molecular weights of the three varieties of sulfur are the same. The Variance of the Voltaic Cell, by Wilder D. Bancroft; the object of

this paper is to show the way in which the phase rule should be applied to reversible cells, and to call attention to the usefulness of the theorem of La Chatelier in predicting the change of the electro-motive force with the change of the parameters.

THE October number of the *Bulletin of the American Mathematical Society* contains an account of the Fifth Summer Meeting of the Society, by the Secretary: 'Note on the Generalization of Poincaré and Goursat's Proof of a Theorem of Weierstrass', by Professor W. F. Osgood; 'Supplementary Note on a Single Valued Function with a Natural Boundary, whose Inverse is also Single Valued,' by Professor W. F. Osgood; 'Note on the Periodic Developments of the Equation of the Center and of the Logarithm of the Radius Vector,' by Professor A. S. Chessin; 'The Theorems of Oscillation of Sturm and Klein (Third Paper),' by Professor Maxime Bôcher; 'Notes;' and 'New Publications.' The November number of the *Bulletin* contains a report on the Cambridge Colloquium, by Professor H. S. White; the six lectures on 'Selected Topics in the General Theory of Functions,' delivered before the Colloquium by Professor W. F. Osgood; a report of the Boston meeting of Section A of the American Association for the Advancement of Science, by Professor James McMahon; 'Notes;' and 'New Publications.' Each of the two numbers fills 56 pages.

THE *American Journal of Science* for November contains the following: 'Irregular Reflection,' by C. C. Hutchins; 'Occurrence of Sperry-lite in North Carolina,' by W. E. Hidden; 'Description of a Fauna found in the Devonian Black Shale of Eastern Kentucky,' by G. H. Girty; 'Separation of Nickel and Cobalt by Hydrochloric Acid,' by F. S. Havens; 'Contributions to Paleontology,' by F. A. Lucas; 'Value of Type Specimens and Importance of their Preservation,' by O. C. Marsh; 'Origin of Mammals,' by O. C. Marsh; 'Causes of Variation in the Composition of Igneous Rocks,' by T. L. Walker; 'Relation between Structural and Magneto-optic Rotation,' by A. W. Wright and D. A. Kreider.

THE frontispiece of *Appleton's Popular Science Monthly* for November is a portrait of Professor F. W. Clarke, Chief Chemist to the United States Geological Survey, and the number contains an account of Professor Clarke's contributions to the advancement of science. In the first article in the number Professor E. S. Morse asks whether middle America was peopled from Asia and answers in the negative. Mr. C. R. Dodge contributes an elaborately illustrated article on the possible fiber industries in the United States, and there are, as usual, a number of interesting articles relating to different departments of natural and social science.

Natural Science announces that it will be transferred to a new editor, who will continue the journal on the same plan as heretofore. Further particulars are deferred until December.

THE jury on 'Imprimerie et Industries de Livre' of the Brussels International Exposition has awarded the *Scientific American* a diploma of merit and a silver medal.

SOCIETIES AND ACADEMIES.

AMERICAN MATHEMATICAL SOCIETY.

A REGULAR meeting of the American Mathematical Society was held at Columbia University, New York City, on Saturday, October 29th. Thirty-six persons were in attendance, including twenty-nine members of the Society. The meeting extended through two sessions, beginning at 10:30 a. m. and 2:30 p. m. The President, Professor Simon Newcomb, occupied the Chair. The Council announced the election of the following persons to membership in the Society: Mr. E. B. Escott, Grand Rapids, Mich.; Dr. L. B. Mullen, Cleveland, O.; Professor J. M. Peirce, Cambridge, Mass.; Professor Alexander Pell, Vermilion, S. D.; Professor Arthur Ranum, Seattle, Wash.; Mr. A. N. Whitehead, Cambridge, Eng.; Mr. W. C. Wright, Boston, Mass. Five applications for membership were received. The total number of members of the Society is now 315. At the meeting of the Council nominations of officers for the coming year were made, and a report was received from the committee appointed at the preceding meeting to consider the question

of improved facilities for the publication of the result of original research in mathematics in this country.

The following papers were read at the meeting:

1. Professor F. MORLEY: 'A regular configuration of ten line-pairs in hyperbolic space.'

2. Professor R. S. WOODWARD: 'The mutual gravitational attraction of two bodies whose mass distributions are symmetrical with respect to the same axis.'

3. Professor E. D. ROE: 'On symmetric functions.'

4. Professor A. S. CHESSIN: 'Note on the problem of three bodies.'

5. Professor MAXIME BÔCHER: 'On singular points of linear differential equations with real coefficients.'

6. Professor E. O. LOVETT: 'Contact transformations of developable surfaces.'

7. Dr. L. E. DICKSON: 'The largest linear homogeneous group with an invariant Pfaffian.'

F. N. COLE.

BIOLOGICAL SOCIETY OF WASHINGTON.—296TH MEETING, SATURDAY, NOVEMBER 5.

MR. F. V. COVILLE exhibited a specimen of lava from Mt. St. Helens, bearing the impression of the bark of a pine, saying that he had been told of the existence of stumps and logs buried in the lava on that mountain.

Mr. Albert F. Woods showed some leaves 'skeletonized' by the small fresh-water crustacean *Cypridopsis*.

Mr. H. J. Webber noted the occurrence of several sports of a species of *Clarkia* which had borne ripe seeds, a thing rather unusual among sports.

Mr. D. G. Fairchild spoke of 'the Dutch Botanical Gardens at Buitenzorg, Java,' illustrating his remarks by photographs. He said that the gardens practically were a biological station, and that in the future they would undoubtedly be much resorted to by students of all nations. In addition to the gardens at Buitenzorg, which comprised 127 acres, about 800 feet above sea level, there was another 'mountain garden' at Tjibodas, some five hours distant, containing a large tract of forest, ranging from 4,500 to 8,000 feet above sea level.